

Ground Disturbance Standard

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1.0 Purpose

This standard establishes minimum planning, hazard control, and execution requirements to ensure that ground disturbance activities are managed in the safest manner possible. Furthermore, this standard provides the requirements to enable the development of functional-level execution plans and procedures, as applicable, and/or to verify that the working procedures of suppliers meet Cenovus’s requirements.

2.0 Scope

The requirements stated in this standard apply to Cenovus staff (both employees and contractors) and suppliers. This document is intended to be used by Cenovus staff and suppliers who plan, execute, and manage ground disturbance work, which encompasses all ground disturbance activities within their scope of work, including responding to a third-party notification.

Trenching and shoring requirements are out of scope, and are covered in the Trenching and Shoring Practice (Table 4: Internal References - Trenching and Shoring Practice).

3.0 Roles and Responsibilities

The following responsibilities apply to this standard:

Table 1: Roles and Responsibilities

Role	Description
Cenovus Business Functions and Worksite Supervisors	<ul style="list-style-type: none"> • Determine the ground disturbance work scope, and communicate it to all parties involved in the execution of the ground disturbance activity. • Designate a competent Ground Disturbance Supervisor to coordinate and supervise ground disturbance activities within the work, search, controlled, or prescribed area of any buried facility. • Where applicable, provide the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, with a minimum of five (5) business day notice prior to the start of any non-emergency ground disturbance, and include all mapping/sketching of the intended work area with the request. • Designate a competent Cenovus supervisor to oversee trenching and shoring operations. • Review all buried facility changes and/or discrepancies, and update the existing engineering records to include all relevant information. • Implement the requirements prescribed by this standard. • Allocate the necessary resources to ensure the requirements of this standard can be practically achieved.

Role	Description
	<ul style="list-style-type: none"> • Define specific roles and responsibilities within their planning and/or execution teams to meet the requirements of this standard. • Develop and implement execution plans and procedures, as required, to meet the requirements of this standard. • Ensure suppliers are informed of and are in compliance with the requirements outlined in this standard during their work activities. • Confirm their staff are adequately trained, knowledgeable, experienced and deemed competent on the topics governed by this standard. • Conduct assurance activities to verify compliance with the expectations outlined in this standard and related project execution plans. • Provide feedback to the document owner concerning proposed changes or improvement opportunities.
<p>Ground Disturbance Supervisor, Ground Disturbance Technician, or designate</p>	<ul style="list-style-type: none"> • Conduct pre-ground-disturbance search to determine whether buried facilities exist within the proposed work, search, controlled, and prescribed areas. • Obtain all necessary approvals in writing, as per the applicable jurisdictional requirements. • Formally notify the provincial One-Call centres of the proposed intent to disturb the ground. • Identify owners of the facilities that are not registered with the One-Call centres, and contact them directly with a request for locates. • Ensure that the locates are provided by a qualified and competent locator. • Confirm that the buried facility owner has provided Cenovus with all information regarding the buried facilities that exist within the proposed work, search, controlled, or prescribed area. • Confirm that the buried facility owner has identified and accurately marked the location of the buried facilities within the proposed work, search, controlled, or prescribed areas at no cost to Cenovus. • Confirm that the buried facility owner has provided locate documentation to Cenovus. • Confirm that the buried facility owner has inspected the site before the ground disturbance begins to ensure that the locating and marking has been performed properly if done by someone other than the owner of the buried facility. • Confirm that at least one (1) electromagnetic line locate is conducted for each ground disturbance activity.

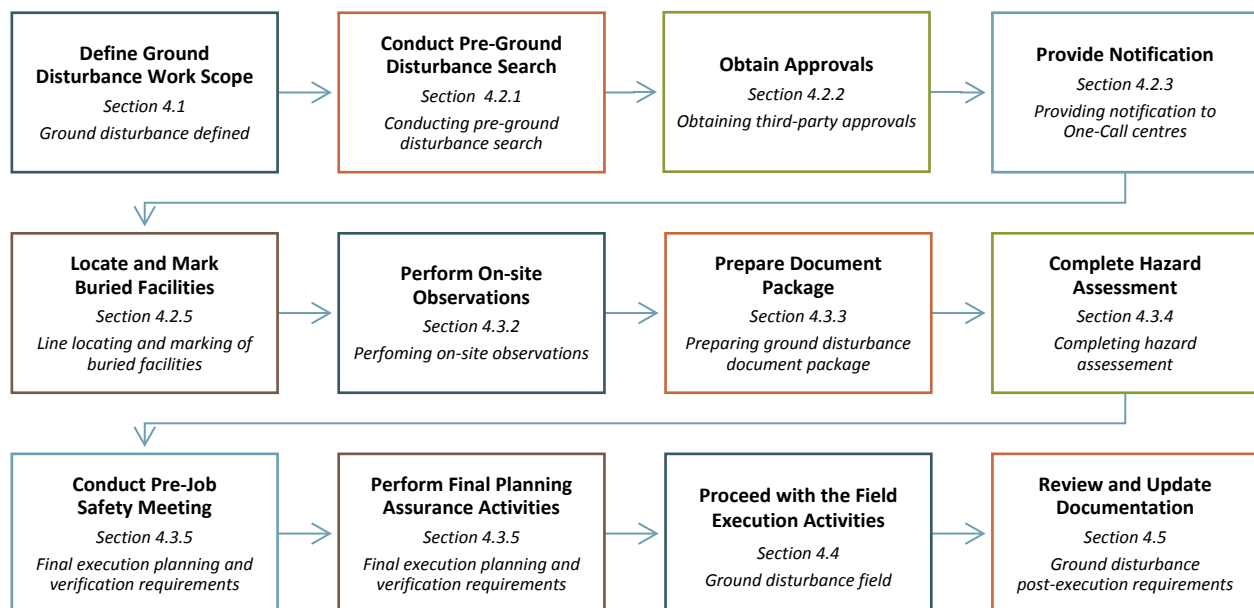
Role	Description
	<ul style="list-style-type: none"> • Refresh the locate request with the One-Call centre, or directly with any affected buried facility owners that are not registered with the One-Call centre, as required. • Confirm that all markers comply with the Cenovus marking requirements. • Ensure that all locate markers are removed from the job site when the ground disturbance activity is completed. • Perform on-site observations. • Prepare ground disturbance document package and have it readily available at the worksite. • Review the ground disturbance document package prior to the start of the ground disturbance. • Confirm that a hazard assessment is completed and documented for all tasks associated with the ground disturbance. • Perform execution planning assurance activities. • Confirm that all exposure points or excavations are properly marked and suitably covered or barricaded to prevent injury to personnel or wildlife. • Confirm that electrical cables or conduits are unearthed, grounded and, where possible, properly isolated. • Confirm that pipes, cables, and conduits to be cut into or removed are unearthed and correctly isolated so that the disconnection is clearly visible at both ends of the facility. • Confirm that proper hydrovacating techniques are used. • Confirm that a competent swamper is present to assist the equipment operator during the mechanical excavation activities. • Confirm that a field mark-up drawing or equivalent is prepared and shows the location of the newly installed facilities and all encountered pre-existing buried facilities. • Photograph or video record the open excavation and condition of exposed pipe or conduit. • Verify the quality of the backfilling work. • Complete a crossing and/or backfill inspection report. • Ensure that all locate stakes and flags are removed. • Photograph the work area after the backfilling has been completed. • Continuously monitor the worksite for any working conditions or scope changes. • If contact is made with a buried facility, stop the ground disturbance and, if necessary, take steps to protect the health and safety of any worker who may be at risk until any unsafe condition resulting from the contact or damage is corrected.

Role	Description
	<ul style="list-style-type: none"> • If contact is made with a buried facility, activate the ERP, if necessary. • If contact is made with a buried facility, and only if safe to do so, inspect the pipe or buried facility for contact damage. • If contact is made with a buried facility, order an emergency locate. • Follow regulatory and internal Cenovus reporting procedures for all facility contacts. • Ensure that all buried facility changes and/or discrepancies are identified and communicated to the appropriate Business Function.
Locators	<ul style="list-style-type: none"> • Obtain all available information for the buried facilities to be located and discuss the project with a knowledgeable Cenovus representative and/or facility owner. • Identify and mark the locations of the buried facilities in the work, search, controlled, or prescribed area. • Record the results of the line locate on the locate plot plan. • Acknowledge on the locate plot plan the confirmation of calibration of the locating device as per the manufacturer's owner's manual. • Use the Uniform Color Code System to mark buried facilities. • Document the locates provided, give a copy of the locates and the supporting documentation to Cenovus, and keep a copy for their own records. • Advise Cenovus if there are suspicions that a buried facility is deeper or shallower than might be expected. • Advise Cenovus of any identified discrepancies, limitations on, or concerns about the locates provided. • Communicate any errors, damages to electromagnetic facilities, or omissions to Cenovus prior to the start of the ground disturbance activity.
Suppliers	<ul style="list-style-type: none"> • Implement the requirements prescribed by this standard. • Develop and implement work plans (processes or procedures) as required to meet the requirements of this standard.
Swampers	<ul style="list-style-type: none"> • Assist the equipment operator during the mechanical excavation activities.

Role	Description
HSER	<ul style="list-style-type: none"> Monitor and collect feedback related to this standard to verify its effectiveness. Lead document reviews and revisions as per H&S Program Management and Management of Change (MOC) Process. Provide subject matter expertise when requested by Cenovus Business Functions or Worksite Supervisors. Support Cenovus Business Functions with the implementation and communication of the requirements outlined in this standard. Conduct assurance activities to verify compliance with the expectations outlined in this standard and related project execution plans.

4.0 Standard Requirements

Figure 1: Cenovus Ground Disturbance Process Map



4.1 Ground disturbance defined

Ground disturbance activity is considered any work, operation, or activity that results in a disturbance of the earth, except for:

- routine, minor road maintenance, such as patching, street sweeping and the grading of gravel roads,
- agricultural cultivation to a depth of less than 450 millimetres (18 inches) below the ground surface over a pipeline, or

- hand-digging to a depth of no more than 300 millimetres (12 inches) below the ground surface, so long as it does not permanently remove cover over a buried facility.

All mechanical excavation, regardless of depth or worksite location, and hand-digging to a depth greater than 300 millimetres are considered ground disturbance and must be conducted in accordance with this standard.

The Business Function must determine the ground disturbance work scope, and communicate it to all parties involved in the execution of the ground disturbance activity.

4.2 Ground disturbance pre-planning requirements

The Business Function must designate a competent Ground Disturbance Supervisor to coordinate and supervise ground disturbance activities within the work, search, controlled, or prescribed area of any buried facility.

4.2.1 Conducting pre-ground-disturbance search

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must conduct a pre-ground disturbance search to determine whether buried facilities exist within the proposed work, search, controlled, and prescribed areas.

Ground disturbance search includes a combination of a desktop and a field-based review. It must consist of an analysis using an appropriate set of data sources including, but not limited to:

- One-Call centres
- Easements and caveats registered against certificates of title
- Regulatory agency maps
- Commercial data and mapping services
- Municipal and rural utility companies
- As-builts, facility plot-plan, and pipeline maps
- Survey plans
- Land owners and residents
- Visual indicators

4.2.2 Obtaining third-party approvals

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must ensure that all necessary approvals are obtained in writing, as per the applicable jurisdictional requirements. Copies of the approvals must be provided to all parties involved, and be available on site.

4.2.3 Providing notification to One-Call centres

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must formally notify the provincial One-Call centres of the proposed ground disturbance.

If the buried facilities are not registered with the One-Call centres, the owners of those facilities must be identified and contacted directly with a request for locates.

4.2.4 Third-party owner facility identification requirements

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that the buried facility owner has:

- provided Cenovus with all information regarding the buried facilities that exist within the proposed work, search, controlled, or prescribed area
- identified and accurately marked the location of the buried facilities within the proposed work, search, controlled, or prescribed areas at no cost to Cenovus
- provided locate documentation to Cenovus
- inspected the site before the ground disturbance begins to ensure that the locating and marking has been performed properly if done by someone other than the owner of the buried facility

4.2.5 Line locating and marking of buried facilities

Ground disturbance work shall not proceed within the work, search, controlled, or prescribed area until the locating and marking of all buried facilities and rights-of-way is complete.

An electromagnetic line locating process must be used to identify the approximate position of the buried facilities. The results of the line locate must be recorded on the locate plot plan. The locator must acknowledge on the locate plot plan the confirmation of calibration of the locating device as per the manufacturer's owner's manual.

All known pipelines and utilities, including concrete-embedded structures, as recorded on the construction survey plans, as-built and pre-job planning searches that pass within the work, search, controlled, or prescribed area, must be located and staked to indicate location alignment, and line size.

4.2.5.1 Electromagnetic line locating requirements

Line locates must be conducted according to the locate industry practices on sweeping using a 4-way inductive sweep to trace, locate, and mark any piping that can be expected to be within the work, search, controlled, or prescribed area.

The search must include four separate passes at 0 degrees, 45 degrees, 90 degrees, and 135 degrees of the area.

Passive modes may also be used to locate targets that do not run in straight lines or that are too short or have an induced signal from an outside source using normal active locate procedures.

4.2.5.2 Number of electromagnetic locates required

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that at least one (1) electromagnetic line locate is conducted for each ground disturbance activity.

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, has the authority to exceed the established number of locates if required.

4.2.5.3 Lifespan of locates

Locates are valid for 30 calendar days from the date they are issued, unless otherwise stated on the locate ticket.

If a ground disturbance has not started or been completed within the maximum timeframe of the existing locates or 30 calendar days from the date locates were provided, whichever is shorter, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must refresh the locate request with the One-Call centre, or directly with any affected buried facility owners that are not registered with the One-Call centre.

Upon providing notification to the One-Call centre, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, in consultation with the buried facility owner, must determine whether a new locate is required or the lifespan of the existing locate can be further extended.

4.2.5.4 Locator qualifications and role responsibilities

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must ensure that the locates are provided by a qualified and competent locator. It is recommended that the line locators are members of the Canadian Association of Pipeline and Utility Locating Contractors (CAPULC).

Locator's responsibilities include:

- obtaining all available information for the buried facilities to be located and discussing the project with a knowledgeable Cenovus representative and/or facility owner
- identifying and marking the locations of the buried facilities in the work, search, controlled, or prescribed area
- documenting the locates provided, giving a copy of the locates and the supporting documentation to Cenovus, and keeping a copy for their own records
- advising Cenovus if there are suspicions that a buried facility is deeper or shallower than might be expected
- advising Cenovus of any identified discrepancies, limitations, or concerns about the locates provided
- communicating any errors, damages to electromagnetic facilities, or omissions to Cenovus prior to the start of the ground disturbance activity

4.2.5.5 Marking requirements

The line locators must use the Uniform Color Code System to mark buried facilities (Appendix 2: Uniform Color Code).

In areas where solid flagging has already been used, the seismic flagging colours developed by the Canadian Association of Geophysical Contractors (CAGC) shall be used to avoid confusion with the Uniform Color Code (Table 5: External References – Underground Infrastructure Damage Prevention).

Markers must be used to clearly indicate the buried facility owner's name and line size.

Markers should be of a material and type that can withstand the environmental conditions, and are acceptable to all parties involved or affected by the ground disturbance.

The overhead power lines that encroach upon the proposed work area must be clearly identified.

The markers must be in sufficient quantity and spaced not more than five (5) metres (or paces) apart. If the pipe follows a curve or there is a bend, the markers should be close enough together to clearly identify the horizontal alignment of the buried facility.

If markers are destroyed, they must be replaced. Ground Disturbance Supervisor's approval is required before replacing markers that are inadvertently knocked over. If there is any doubt as to the original location of the marker, a new locate request is required.

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must:

- confirm that all markers comply with the Cenovus marking requirements
- ensure that all locate markers are removed from the job site when the ground disturbance activity is completed

4.3 Ground disturbance execution planning requirements

4.3.1 General execution planning requirements

Where applicable, the Business Function initiating ground disturbance must provide the appropriate Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, with a minimum of five (5) business day notice prior to the start of any non-emergency ground disturbance, and must include all mapping/sketching of the intended work area with their request.

4.3.2 Performing on-site observations

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must visit the site to:

- have a discussion with the area operations field personnel
- meet with the area landowner
- verify that all stakes, locates, and powerline signage are in place
- check for visible indicators
- photograph the access and work area
- distribute photographs to applicable personnel and equipment operators

4.3.3 Preparing ground disturbance document package

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must prepare a ground disturbance document package, and have it readily available at the worksite.

The document package must include, but is not limited to:

- copies of the Ground Disturbance Standard
- applicable approvals
- notification records
- completed field locate records
- pipeline base maps and aerial photography
- Cenovus records related to the task, including as-builts, plot plans, facility maps, engineering drawings, and well or pipeline file records
- confirmation of third party, pipeline owner, or co-op records
- Safety Data Sheet (SDS) for the expected hazardous substances in the buried facilities
- site-specific requirements, including emergency documents

All workers involved in the ground disturbance activity must be made aware of the on-site location of the copies of the Ground Disturbance Standard.

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must review the document package prior to the start of the ground disturbance.

4.3.4 Completing hazard assessment

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that a hazard assessment is completed and documented for all tasks associated with the ground disturbance, including all applicable field execution activities (e.g. mechanical excavation, hand exposure, hydrovac excavation, etc.).

The hazard assessment must include the hazards that exist within the work, search, controlled, or prescribed areas, as applicable. All workers involved in the ground disturbance activity must be included in the hazard assessment. All other workers at the worksite that could be impacted by the ground disturbance must be informed of the hazards and the methods used to control or eliminate those hazards.

4.3.5 Final execution planning and verification requirements

Prior to starting ground disturbance, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must carry out the following execution planning assurance activities:

- read and comply with all applicable approval requirements and Cenovus permits
- notify any third party facility owners, who have requested an on-site meeting prior to the start of the ground disturbance
- inspect the work, search, controlled, and prescribed areas (as applicable) to ensure that all marked lines match the locate plot plan, and that they are colour coded and marked
- verify that the field line locates and survey plans agree with the information sources compiled during the planning stage
- complete the Ground Disturbance Checklist (Table 4: Internal References – Ground Disturbance Checklist)
- hold and document a pre-job safety meeting to review and discuss the work scope, the permits, and the completed Ground Disturbance Checklist
- ensure all personnel understand their job responsibilities, as well as the emergency response procedures in the event of a line contact
- ensure that sources of hazardous energy that could impact the work scope have been controlled

4.4 Ground disturbance field execution requirements

4.4.1 Hand exposure

When a mechanical excavation is planned within five (5) metres of a buried facility, the facility must be hand exposed for visible inspection.

Necessary precautions must be taken to ensure that the exposed facilities are supported.

Where a proposed ground disturbance will be parallel to an existing buried facility and within the hand exposure zone, the buried facility must be exposed at sufficient

intervals to confirm the alignment and depth throughout the planned work, search, controlled, and prescribed areas, or at intervals as set out by the facility owner in the crossing or proximity agreement.

Only hand-digging excavation techniques acceptable to the buried facility owner must be used during the hand exposure process. Picks, wrecking bars, and probes are not permitted when hand exposing.

The minimum exposure requirement for crossing under existing buried facilities is one (1) metre on each side of a buried facility to a depth of 300 millimetres below the planned depth of the excavation.

Mechanical equipment may be used to remove asphalt or concrete surface materials in the hand expose process. Once the hard surface material is removed, non-destructive excavation techniques acceptable to the operator of the buried facility must be used.

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that:

- all exposure points or excavations are properly marked and suitably covered or barricaded to prevent injury to personnel or wildlife
- electrical cables or conduits are unearthed, grounded and, where possible, properly isolated
- pipes, cables, and conduits to be cut into or removed are unearthed and correctly isolated so that the disconnection is clearly visible at both ends of the facility

In the event of an unidentified or unexpected buried facility being spotted or suspected within the work area, the worker must stop the work, and notify the Ground Disturbance Supervisor.

4.4.1.1 Hydrovac

Hydrovac exposure is acceptable when it's confirmed by the buried facility owner, and includes the operating pressure and temperature that must be used to avoid damaging the buried facility.

When excavating within one (1) metre of any energized or de-energized cable, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that:

- the water temperature is limited to 38° (100° F), and the pressure is limited to 10.3 megapascals (1500 pounds/square inch)
- wand tips are of the oscillating type to prevent the release of a concentrated water stream

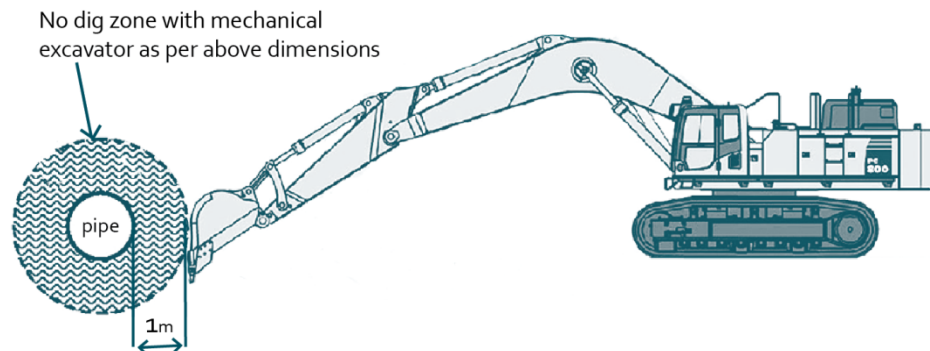
Hydrovac in the vicinity of buried facilities without locates constitutes a ground disturbance with mechanical excavation equipment.

4.4.2 Mechanical excavation

Ground disturbance work with mechanical excavation equipment is not permitted within the hand expose zone of a buried facility until the facility has been exposed to sight for visible inspection.

No mechanical equipment is allowed within one (1) metre of an exposed facility, except under the direct on-site supervision of the Ground Disturbance Supervisor or if applicable, under the direct supervision of the owner representative for the buried facility.

Figure 2: Mechanical excavation



The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that a competent swamper is present to assist the equipment operator during the mechanical excavation activities.

For the NEB-regulated pipelines:

- no mechanical excavation may take place within three (3) metres of the pipelines or facility, unless the location of the pipeline has been determined by hand exposure, or if the facility owner has confirmed the exact location of the pipe and has informed the person carrying out the excavation of that location
- the facility owner's representative must be present during all ground disturbance activities within one (1) metre of the pipe
 - If a greater distance is stipulated in the crossing agreement, it must be followed.
- where the excavation crosses the pipe, the pipe must be at least 60 centimetres deeper than the proposed excavation

4.4.3 Trenching and shoring

A competent Cenovus supervisor must be designated by the Business Function to oversee trenching and shoring operations. The Ground Disturbance Supervisor may assume the role of the trenching supervisor providing they are competent to do so.

Trenching operations must comply with the *Trenching and Shoring Practice* (Table 4: Internal References – Trenching and Shoring Practice).

4.4.4 Backfilling

Prior to backfilling, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must confirm that a field mark-up drawing or equivalent is prepared, and shows the location of the newly installed facilities and all encountered pre-existing buried facilities.

In situations where a third party pipeline was exposed, the owner must be notified a minimum of 24 hours prior to backfilling.

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must:

- photograph or video record the open excavation and condition of exposed pipe or conduit
- verify the quality of the backfilling work
- complete a crossing and/or backfill inspection report, as applicable
- ensure that all locate stakes and flags are removed
- photograph the work area after the backfilling has been completed

4.4.5 Managing working conditions or scope changes

The Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must continuously monitor the worksite for any working conditions or scope changes.

Any changes in working conditions or work scope will result in the immediate suspension of the hazard assessment and/or the Safe Work Permit. Upon suspension, all work associated with that hazard assessment and/or permit must stop. The related hazard assessment must be revised to evaluate the changes for new hazards and the appropriate hazard elimination or controls that must be implemented.

Depending on the working conditions or scope changes, additional locates, and a new Ground Disturbance Checklist may be required.

4.4.6 Contacting a buried facility

If contact is made with a buried facility, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must immediately:

- stop the ground disturbance
- take steps to protect the health and safety of any worker who may be at risk until any unsafe condition resulting from the contact or damage is corrected
- activate the ERP, if necessary
- inspect the pipe or buried facility for contact damage, only if safe to do so
- order an emergency locate

- follow regulatory and Cenovus internal reporting requirements for all facility contacts

The ground disturbance cannot be resumed without the approval of the regulator or the owner of the buried facility, as applicable.

4.5 Ground disturbance post-execution requirements

4.5.1 Post-job documentation review and update

Upon completion of the ground disturbance activity, the Ground Disturbance Supervisor, Ground Disturbance Technician, or designate, must ensure that all buried facility changes and/or discrepancies are identified and communicated to the appropriate Business Function.

Upon receipt of the identified changes and/or discrepancies, the Business Function must review the submitted changes, and update the existing engineering records to include all relevant information.

4.6 Third party ground disturbance requirements

In situations where a third party, such as another company or landowner, seeks to cross a Cenovus buried facility or conduct ground disturbance within proximity of a Cenovus facility, the appropriate agreements and requirements must be established with the third party.

A Cenovus ground disturbance representative must be designated by the Business Function to oversee a third party ground disturbance.

5.0 Training and Competency

Competency describes the knowledge and skills required to successfully perform the technical aspects of a job. A worker must be able to demonstrate competency in safely performing work tasks or using equipment. There are two aspects of competency that must be considered; applicable procedures and training requirements. Each are governed by specific COMS Standards.

5.1 Operating and maintenance procedures

It is the accountability of the Cenovus Worksite Supervisors to ensure that workers under their supervision have been trained in the appropriate policies, standards, processes, and procedures. This accountability is defined within [4.5 Operating and Maintenance Procedures COMS Standard](#).

5.2 Training & competency

It is expected that all personnel involved in work related to this standard will have training and the appropriate competency to perform their roles. Cenovus expectations related to training and competency are outlined in [5.4 Training and Competency Management COMS Standard](#).

5.2.1 Industry standard training

All Cenovus and contract staff who are involved in any ground disturbance activities are required to possess and be readily available to provide proof of valid training certification from a course provider that is endorsed by the Alberta Common Ground Alliance (ABCGA). All other training certificates for ground disturbance are not recognized on a Cenovus worksite.

- Ground Disturbance 101 Standard (Level 1)

This course is required for anyone who is involved in any type of ground disturbance activity, excluding supervision. Workers with this level of training must always be working under the direct supervision and guidance of a supervisor who has a valid ground disturbance supervisory (Level 2) certificate. Certification is valid for 3 years, and must be renewed.

- Ground Disturbance 201 Standard (Level 2)

This course is required for anyone who is involved in the supervision of a ground disturbance activity. Certification is valid for 3 years, and must be renewed.

6.0 Program Compliance

6.1 Compliance measurement

Compliance with this standard shall be assessed through program assessments and internal audits, or other measurement criteria as specified in the [7.2 Assurance COMS Standard](#). Measurement can also be accomplished through the tracking of appropriate Key Performance Indicators (KPIs).

Business Functions impacted by this standard must include compliance and program effectiveness verifications in their business assurance program. Ground Disturbance Audit Checklist can be used to measure performance against the requirements of this standard (Table 4: Internal References – Ground Disturbance Audit Checklist).

7.0 References

7.1 Definitions and acronyms

The following terms, definitions and acronyms are specific to this standard:

Table 2: Terms and Definitions

Term	Definition
Buried facility	Anything below the ground (underground) used in the collection, storage, transmission or distribution of: water, storm water, sewage, electronic telephonic or telegraphic communications, cable television, electrical energy, oil, natural gas, steam, petroleum products, chemicals, and other substances including, but not limited to: pipes, conduits, ducts, wire, valves, manholes, catch basins, and attachments to these items.

Term	Definition
Cenovus Business Function	The team that represents Cenovus as the owner or lease holder of the land on which work is being performed; prime contractor for a work site.
Cenovus Worksite Supervisor	The person who has charge of a Cenovus work site or authority over a worker.
Competent	Adequately qualified, suitably trained and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision.
Controlled area	Area that extends 30 metres on each side from the centre of the pipeline, or from the pipe centreline to the edge of the right-of-way (ROW), whichever is wider.
Crossing agreement	A written and executed document issued in advance of any ground disturbance to be undertaken by a third party within a right-of-way (ROW) or within 5 metres of a pipeline where there is no ROW. The term “crossing agreement” does not necessarily imply that a pipeline or ROW will be crossed.
Execution plan	The governing document that establishes the means to execute, monitor, and control projects.
Ground Disturbance Supervisor	Any Cenovus employee, contractor, or consultant authorized by Cenovus and deemed competent by training, experience, and certification and who ensures ground disturbance activities are completed in strict conformance with all Cenovus and regulatory requirements.
Hand-digging	Non-destructive excavation technique acceptable to the owner of the buried facility. Includes installation of stakes or pins to a depth no greater than 300 millimetres.
Hand exposure	The exposure of a buried facility using hand-digging excavation techniques acceptable to the owner of the buried facility to the extent that its identity, location, and alignment can be confirmed.
Hand expose zone	Zone that includes the work area and extends 5 metres in all directions from the edges of the work area. Cenovus requires that all buried facilities within the hand expose zone are hand exposed.
Hazard assessment	A hazard assessment is an assessment of a worksite and work activity that includes evaluating what poses a hazard to the health and safety of the workers engaged in the planned work activity, other workers in the immediate area, and the environment.
Hydrovacing	The use of pressurized water to loosen and a vacuum to extract soil.
Locate (noun)	Information provided by the locator in the form of ground surface markings and underground infrastructure location documentation, such as drawings, mapping, numeric descriptions or other written documentation.

Term	Definition
Locator	Person authorized by the facility owner to perform a locate
Mechanical excavation	Any movement of earth using mechanized tools or equipment, regardless of size, depth, or distance.
Prescribed area (NEB-regulated pipelines only)	Area that extends 30 metres perpendicularly on each side from the centreline of a pipe.
Proximity agreement	Allows a party to create a ground disturbance within a 30 metre proximity of the owner’s buried facility.
Search area	Area that extends 30 metres in all directions surrounding the work area.
Swamper	General assistant or helper to the equipment operator. May also be referred to as a spotter depending upon the activity.
Supplier	A service provider company working under an agreement or contract with Cenovus to perform a specified job scope, utilizing their own workers.
Third party buried facility	Any underground facility that is owned by someone other than Cenovus.
Work area	Physical surface location where the ground will be disturbed.
Work plan	A detailed accounting of how an individual or group proposes going about accomplishing a specific task.

Table 3: Acronyms, Initialisms and Abbreviations

Acronym	In Full
ABCGA	Alberta Common Ground Alliance
APWA	American Public Works Association
CAGC	Canadian Association of Geophysical Contractors
CAPULC	Canadian Association of Pipeline and Utility Locating Contractors
ERP	Emergency Response Plan
GD	Ground Disturbance
KPI	Key Performance Indicators
NEB	National Energy Board
ROW	Right-of-Way
SDS	Safety Data Sheet

7.2 Internal references

The following Cenovus references supported the development of this standard:

Table 4: Internal References

Reference Type or File Number (CEN-EHSxxxxx)	Reference Title
Policy	Corporate Responsibility Policy
CEN-EHS243	H&S Definitions and Acronyms Standard
CEN-EHSReg787	Regulatory Definitions and Acronyms
CEN-EHS13040	H&S Document and Management of (MOC) Process
CEN-EHS13260	Ground Disturbance Audit Checklist
CEN019	Ground Disturbance Checklist
CEN-EHS129	Trenching and Shoring Practice
COMS Standard	7.2 Assurance COMS Standard

7.3 External references

The following external references supported the development of this standard:

Table 5: External References

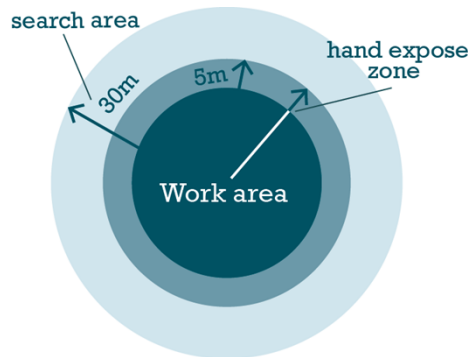
Reference Type/ Agency/ Association	Reference Title
Regulatory (AB)	Alberta OHS Act, Regulation & Code
CAGC	Buried Facility Marking Practices
Energy Safety Canada	Ground Disturbance and Damage Prevention: A Program Development Guide
Regulatory (AB)	Pipeline Act
National Energy Board	Pipeline Damage Prevention Regulations
ABCGA	The Damage Prevention Process in Alberta
Regulatory (SK)	The Occupational Health and Safety Regulations
Regulatory (SK)	The Pipelines Act
CCGA	Underground Infrastructure Damage Prevention
APWA	Uniform Color Code

Appendix 1: Search Area, Work Area, and Hand Expose Zone

Work area includes the physical surface location where the ground will be disturbed.

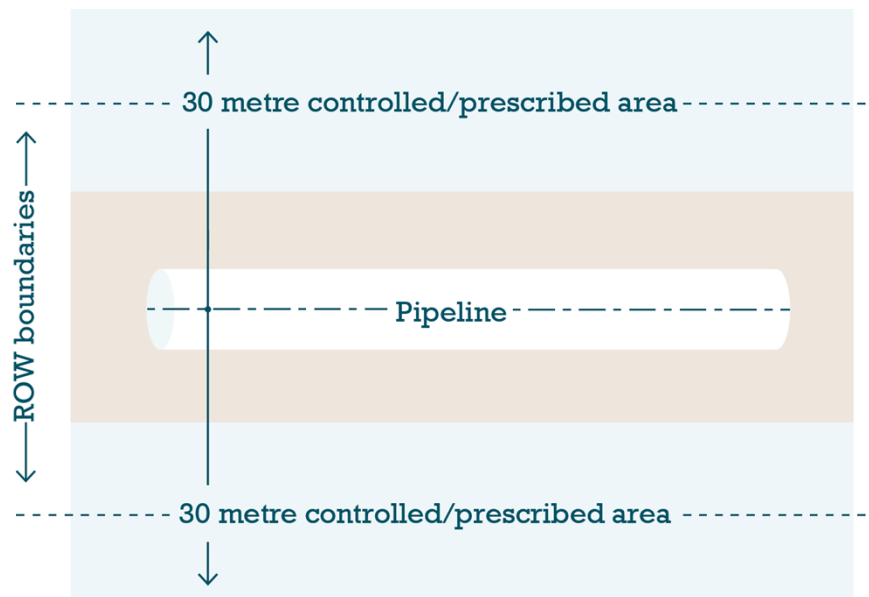
Search area extends 30 metres in all directions surrounding the work area.

Hand expose zone includes the work area and extends 5 metres in all directions from the edges of the work area. Cenovus requires that all buried facilities within the hand expose zone are hand exposed.



See *Table 2: Terms and Definitions* for more information.

Appendix 2: Controlled Area, Prescribed Area



Controlled area extends 30 metres on each side from the centre of the pipeline, or from the pipe centreline to the edge of the right-of-way (ROW), whichever is wider.

Prescribed area applies to the NEB-regulated pipelines only and extends 30 metres perpendicularly on each side from the centreline of a pipe.

See *Table 2: Terms and Definitions* for more information.

Appendix 3: Uniform Colour Code

WHITE	Proposed Excavation
PINK	Temporary Survey Markings
RED	Electric Power Lines, Cables, Conduits and Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum or Gaseous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables or Conduit
BLUE	Potable Water
PURPLE	Reclaimed water, Irrigation and Slurry Lines
GREEN	Sewers and Drain Lines

See *Table 5: External references* for more information.